

#7
RECEIVED

SEP 19 2000

TECH CENTER 1600/2000

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SEP 21 2000

TECH CENTER 1600/2000

SEQUENCE LISTING

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<120> AUTOANTIGENIC FRAGMENTS, METHODS AND ASSAYS

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Ser	Leu	His	Val	Ala	Asp	Pro	Val	Glu	Ala	Val	Leu	Gln	Leu	Gln	Asp
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Cys	Ser	Ile	Phe	Ile	Lys	Ile	Ile	Asp	Arg	Ile	His	Gly	Thr	Glu	Glu
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Gly	Gln	Gln	Ile	Leu	Lys	Gln	Pro	Val	Ser	Glu	Arg	Leu	Asp	Phe	Val
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Cys	Ser	Phe	Leu	Gln	Lys	Asn	Arg	Lys	His	Pro	Ser	Ser	Pro	Glu	Cys
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Leu	Val	Ser	Ala	Gln	Lys	Val	Leu	Glu	Gly	Ser	Glu	Leu	Glu	Leu	Ala
					85			90				95			
Lys	Met	Thr	Met	Leu	Leu	Leu	Tyr	His	Ser	Thr	Met	Ser	Ser	Lys	Ser
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Pro	Arg	Asp	Trp	Glu	Gln	Phe	Glu	Tyr	Lys	Ile	Gln	Ala	Glu	Leu	Ala
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Val	Ile	Leu	Lys	Phe	Val	Leu	Asp	His	Glu	Asp	Gly	Leu	Asn	Leu	Asn
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Glu	Asp	Leu	Glu	Asn	Phe	Leu	Gln	Lys	Ala	Pro	Val	Pro	Ser	Thr	Cys
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Ser	Ser	Thr	Phe	Pro	Glu	Glu	Leu	Ser	Pro	Pro	Ser	His	Gln	Ala	Lys
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Arg	Glu	Ile	Arg	Phe	Leu	Glu	Leu	Gln	Lys	Val	Ala	Ser	Ser	Ser	
					180			185			190				
Gly	Asn	Asn	Phe	Leu	Ser	Gly	Ser	Pro	Ala	Ser	Pro	Met	Gly	Asp	Ile
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Leu	Gln	Thr	Pro	Gln	Phe	Gln	Met	Arg	Arg	Leu	Lys	Lys	Gln	Leu	Ala
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Asp	Glu	Arg	Ser	Asn	Arg	Asp	Glu	Leu	Glu	Leu	Glu	Leu	Ala	Glu	Asn
					225			230			235			240	
Arg	Lys	Leu	Leu	Thr	Glu	Lys	Asp	Ala	Gln	Ile	Ala	Met	Met	Gln	Gln
					245			250			255				
Arg	Ile	Asp	Arg	Leu	Ala	Leu	Leu	Asn	Glu	Lys	Gln	Ala	Ala	Ser	Pro
					260			265			270				
Leu	Glu	Pro	Lys	Glu	Leu	Glu	Glu	Leu	Arg	Asp	Lys	Asn	Glu	Ser	Leu
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Thr	Met	Arg	Leu	His	Glu	Thr	Leu	Lys	Gln	Cys	Gln	Asp	Leu	Lys	Thr
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Gly	Asp	Leu	Ser	Phe	Lys	Leu	Arg	Glu	Phe	Ala	Ser	His	Leu	Gln	Gln
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Leu	Gln	Asp	Ala	Leu	Asn	Glu	Leu	Thr	Glu	Glu	His	Ser	Lys	Ala	Thr
					340			345			350				
Gln	Glu	Trp	Leu	Glu	Lys	Gln	Ala	Gln	Leu	Glu	Lys	Glu	Leu	Ser	Ala
					355			360			365				
Ala	Leu	Gln	Asp	Lys	Lys	Cys	Leu	Glu	Glu	Lys	Asn	Glu	Ile	Leu	Gln
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Pro	Pro	Gln	Glu	Lys	Gly	Glu	Val	Leu	Gly	Asp	Val	Leu	Gln	Leu	Glu
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Thr	Leu	Lys	Gln	Glu	Ala	Ala	Thr	Leu	Ala	Ala	Asn	Asn	Thr	Gln	Leu
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Gln	Ala	Arg	Val	Glu	Met	Leu	Glu	Thr	Glu	Arg	Gly	Gln	Gln	Glu	Ala
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Lys	Leu	Leu	Ala	Glu	Arg	Gly	His	Phe	Glu	Glu	Glu	Lys	Gln	Gln	Leu
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Ser	Ser	Leu	Ile	Thr	Asp	Leu	Gln	Ser	Ser	Ile	Ser	Asn	Leu	Ser	Gln
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Ala	Lys	Glu	Glu	Leu	Glu	Gln	Ala	Ser	Gln	Ala	His	Gly	Ala	Arg	Leu
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Thr Ala Gln Val Ala Ser Leu Thr Ser Glu Leu Thr Thr Leu Asn Ala
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 Thr Ile Gln Gln Gln Asp Gln Glu Leu Ala Gly Leu Lys Gln Gln Ala
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 Lys Glu Lys Gln Ala Gln Leu Ala Gln Thr Leu Gln Gln Gln Glu Gln
 530 535 540
 Ala Ser Gln Gly Leu Arg His Gln Val Glu Gln Leu Ser Ser Ser Leu
 545 550 555 560
 Lys Gln Lys Glu Gln Gln Leu Lys Glu Val Ala Glu Lys Gln Glu Ala
 565 570 575
 Thr Arg Gln Asp His Ala Gln Gln Leu Ala Thr Ala Ala Glu Glu Arg
 580 585 590
 Glu Ala Ser Leu Arg Glu Arg Asp Ala Ala Leu Lys Gln Leu Glu Ala
 595 600 605
 Leu Glu Lys Glu Lys Ala Ala Lys Leu Glu Ile Leu Gln Gln Gln Leu
 610 615 620
 Gln Val Ala Asn Glu Ala Arg Asp Ser Ala Gln Thr Ser Val Thr Gln
 625 630 635 640
 Ala Gln Arg Glu Lys Ala Glu Leu Ser Arg Lys Val Glu Glu Leu Gln
 645 650 655
 Ala Cys Val Glu Thr Ala Arg Gln Glu Gln His Glu Ala Gln Ala Gln
 660 665 670
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 675 680 685
 Glu Lys Glu Arg Val Ala Gln Glu Lys Asp Gln Leu Gln Glu Gln Leu
 690 695 700
 Gln Ala Leu Lys Glu Ser Leu Lys Val Thr Lys Gly Ser Leu Glu Glu
 705 710 715 720
 Glu Lys Arg Arg Ala Ala Asp Ala Leu Glu Glu Gln Gln Arg Cys Ile
 725 730 735
 Ser Glu Leu Lys Ala Glu Thr Arg Ser Leu Val Glu Gln His Lys Arg
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 Ala Arg Leu Leu Gln Leu Gly Glu Ala His Gln Ala Glu Thr Glu Val
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 Tyr Glu Asp Ser Gln Gln Glu Glu Ala Gln Tyr Gly Ala Met Phe Gln
 820 825 830
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 835 840 845
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 850 855 860
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 Lys Leu Ala Asp Asp Leu Ser Thr Leu Gln Glu Lys Met Ala Ala Thr
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 Ser Lys Glu Val Ala Arg Leu Glu Thr Leu Val Arg Lys Ala Gly Glu
 915 920 925
 Gln Gln Glu Thr Ala Ser Arg Glu Leu Val Lys Glu Pro Ala Arg Ala
 930 935 940 945
 Gly Asp Arg Gln Pro Glu Trp Leu Glu Glu Gln Gln Gly Arg Gln Phe
 950 955 960
 Cys Ser Thr Gln Ala Ala Leu Gln Ala Met Glu Arg Glu Ala Glu Gln
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 Met Gly Asn Glu Leu Glu Arg Leu Arg Ala Ala Leu Met Glu Ser Gln
 980 985 990

Gly Gln Gln Gln Glu Glu Arg Gly Gln Gln Glu Arg Glu Val Ala Arg
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 1395 1400 1405
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 Gln Leu Arg Ala Glu Lys Ala Ser Tyr Ala Glu Gln Leu Ser Met Leu
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 Arg Glu Lys Tyr Val Gln Glu Leu Ala Ala Val Arg Ala Asp Ala Glu
 1475 1480 1485

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 Arg Thr Gln Pro Asp Gly Thr Ser Val Pro Gly Glu Pro Ala Ser Pro
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 Ile Ser Gln Arg Leu Pro Pro Lys Val Glu Ser Leu Glu Ser Leu Tyr
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 Phe Thr Pro Ile Pro Ala Arg Ser Gln Ala Pro Leu Glu Ser Ser Leu
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 Asp Ser Leu Gly Asp Val Phe Leu Asp Ser Gly Arg Lys Thr Arg Ser
 1780 1785 1790
 Ala Arg Arg Arg Thr Thr Gln Ile Ile Asn Ile Thr Met Thr Lys Lys
 1795 1800 1805
 Leu Asp Val Glu Glu Pro Asp Ser Ala Asn Ser Ser Phe Tyr Ser Thr
 1810 1815 1820
 Arg Ser Ala Pro Ala Ser Gln Ala Ser Leu Arg Ala Thr Ser Ser Thr
 1825 1830 1835 1840
 Gln Ser Leu Ala Arg Leu Gly Ser Pro Asp Tyr Gly Asn Ser Ala Leu
 1845 1850 1855
 Leu Ser Leu Pro Gly Tyr Arg Pro Thr Thr Arg Ser Ser Ala Arg Arg
 1860 1865 1870
 Ser Gln Ala Gly Val Ser Ser Gly Ala Pro Pro Gly Arg Asn Ser Phe
 1875 1880 1885
 Tyr Met Gly Thr Cys Gln Asp Glu Pro Glu Gln Leu Asp Asp Trp Asn
 1890 1895 1900
 Arg Ile Ala Glu Leu Gln Gln Arg Asn Arg Val Cys Pro Pro His Leu
 1905 1910 1915 1920
 Lys Thr Cys Tyr Pro Leu Glu Ser Arg Pro Ser Leu Ser Leu Gly Thr
 1925 1930 1935
 Ile Thr Asp Glu Met Lys Thr Gly Asp Pro Gln Glu Thr Leu Arg
 1940 1945 1950
 Arg Ala Ser Met Gln Pro Ile Gln Ile Ala Glu Gly Thr Gly Ile Thr
 1955 1960 1965
 Thr Arg Gln Gln Arg Lys Arg Val Ser Leu Glu Pro His Gln Gly Pro
 1970 1975 1980

Gly Thr Pro Glu Ser Lys Lys Ala Thr Ser Cys Phe Pro Arg Pro Met
 1985 1990 1995 2000
 Thr Pro Arg Asp Arg His Glu Gly Arg Lys Gln Ser Thr Thr Glu Ala
 2005 2010 2015
 Gln Lys Lys Ala Ala Pro Ala Ser Thr Lys Gln Ala Asp Arg Arg Gln
 2020 2025 2030
 Ser Met Ala Phe Ser Ile Leu Asn Thr Pro Lys Lys Leu Gly Asn Ser
 2035 2040 2045
 Leu Leu Arg Arg Gly Ala Ser Lys Lys Ala Leu Ser Lys Ala Ser Pro
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 Asn Thr Arg Ser Gly Thr Arg Arg Ser Pro Arg Ile Ala Thr Thr Thr
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 Gly Lys Ala Lys His
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 35 40 45
 Gly Gln Gln Ile Leu Lys Gln Pro Val Ser Glu Arg Leu Asp Phe Val
 50 55 60
 Cys Ser Phe Leu Gln Lys Asn Arg Lys His Pro Ser Ser Pro Glu Cys
 65 70 75 80
 Leu Val Ser Ala Gln Lys Val Leu Glu Gly Ser Glu Leu Glu Leu Ala
 85 90 95
 Lys Met Thr Met Leu Leu Leu Tyr His Ser Thr Met Ser Ser Lys Ser
 100 105 110
 Pro Arg Asp Trp Glu Gln Phe Glu Tyr Lys Ile Gln Ala Glu Leu Ala
 115 120 125
 Val Ile Leu Lys Phe Val Leu Asp His Glu Asp Gly Leu Asn Leu Asn
 130 135 140
 Glu Asp Leu Glu Asn Phe Leu Gln Lys Ala Pro Val Pro Ser Thr Cys
 145 150 155 160
 Ser Ser Thr Phe Pro Glu Glu Leu Ser Pro Pro Ser His Gln Ala Lys
 165 170 175
 Arg Glu Ile Arg Phe Leu Glu Leu Gln Lys Val Ala Ser Ser Ser Ser
 180 185 190
 Gly Asn Asn Phe Leu Ser Gly Ser Pro Ala Ser Pro Met Gly Asp Ile
 195 200 205
 Leu Gln Thr Pro Gln Phe Gln Met Arg Arg Leu Lys Lys Gln Leu Ala
 210 215 220
 Asp Glu Arg Ser Asn Arg Asp Glu Leu Glu Leu Glu Leu Ala Glu Asn
 225 230 235 240
 Arg Lys Leu Leu Thr Glu Lys Asp Ala Gln Ile Ala Met Met Gln Gln
 245 250 255
 Arg Ile Asp Arg Leu Ala Leu Leu Asn Glu Lys Gln Ala Ala Ser Pro
 260 265 270
 Leu Glu Pro Lys Glu Leu Glu Glu Leu Arg Asp Lys Asn Glu Ser Leu
 275 280 285
 Thr Met Arg Leu His Glu Thr Leu Lys Gln Cys Gln Asp Leu Lys Thr
 290 295 300
 Glu Lys Ser Gln Met Asp Arg Lys Ile Asn Gln Leu Ser Glu Glu Asn

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Gly Asp Leu Ser Phe	Lys Leu Arg Glu	Phe Ala Ser His Leu Gln	Gln Gln
325	330	335	
Leu Gln Asp Ala	Leu Asn Glu Leu	Thr Glu Glu His Ser	Lys Ala Thr
340	345	350	
Gln Glu Trp Leu	Glu Lys Gln Ala	Gln Leu Glu Lys	Glu Leu Ser Ala
355	360	365	
Ala Leu Gln Asp Lys	Lys Cys Leu	Glu Glu Lys Asn	Glu Ile Leu Gln
370	375	380	
Gly Lys Leu Ser Gln	Leu Glu Glu His Leu	Ser Gln Leu Gln Asp	Asn
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Pro Pro Gln Glu Lys	Gly Glu Val Leu	Gly Asp Val Leu Gln	Leu Glu
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Thr Leu Lys Gln	Glu Ala Ala Thr	Leu Ala Ala Asn	Asn Thr Gln Leu
420	425	430	
Gln Ala Arg Val	Glu Met Leu	Glu Thr Glu Arg	Gly Gln Gln Glu Ala
435	440	445	
Lys Leu Leu Ala	Glu Arg Gly	His Phe Glu Glu	Glu Lys Gln Gln Leu
450	455	460	
Ser Ser Leu Ile	Thr Asp Leu	Gln Ser Ser	Ile Ser Asn Leu Ser Gln
465	470	475	480
Ala Lys Glu Glu	Leu Glu Gln Ala	Ser Gln Ala His	Gly Ala Arg Leu
485	490	495	
Thr Ala Gln Val	Ala Ser Leu	Thr Ser Glu Leu	Thr Thr Leu Asn Ala
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Thr Ile Gln Gln	Gln Asp Gln	Glu Leu Ala	Gly Leu Lys Gln Gln Ala
515	520	525	
Lys Glu Lys Gln	Ala Gln Leu	Ala Gln Thr	Leu Gln Gln Glu Gln
530	535	540	
Ala Ser Gln Gly	Leu Arg His	Gln Val Glu	Gln Leu Ser Ser Ser Leu
545	550	555	560
Lys Gln Lys Glu	Gln Gln Leu	Lys Glu Val	Ala Glu Lys Gln Glu Ala
565	570	575	
Thr Arg Gln Asp	His Ala Gln	Gln Leu Ala	Thr Ala Ala Glu Glu Arg
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Glu Ala Ser	Leu Arg Glu Arg	Asp Ala Ala	Leu Lys Gln Leu Glu Ala
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Leu Glu Lys Glu	Lys Ala Ala	Lys Leu Glu	Ile Leu Gln Gln Gln Leu
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Ala Gln Arg Glu	Lys Ala Glu	Leu Ser Arg	Lys Val Glu Glu Leu Gln
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Ala Cys Val Glu	Thr Ala Arg	Gln Glu Gln His	Glu Ala Gln Ala Gln
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Val Ala Glu	Leu Glu Leu	Gln Leu Arg	Ser Glu Gln Gln Lys Ala Thr
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Glu Lys Glu Arg	Val Ala Gln	Glu Lys Asp Gln	Leu Gln Glu Gln Leu
690	695	700	
Gln Ala Leu Lys	Glu Ser	Leu Lys Val	Thr Lys Gly Ser Leu Glu Glu
705	710	715	720
Glu Lys Arg Arg	Ala Ala Asp	Ala Leu Glu	Glu Gln Gln Arg Cys Ile
725	730	735	
Ser Glu Leu Lys	Ala Glu Thr	Arg Ser Leu Val	Glu Gln His Lys Arg
740	745	750	
Glu Arg Lys Glu	Leu Glu Glu	Glu Arg Ala Gly	Arg Lys Gly Leu Glu
755	760	765	
Ala Arg Leu Gln	Gln Leu Gly	Glu Ala His	Gln Ala Glu Thr Glu Val
770	775	780	
Leu Arg Arg Glu	Leu Ala Glu	Ala Met Ala	Ala Gln His Thr Ala Glu
785	790	795	800
Ser Glu Cys Glu	Gln Leu Val	Lys Glu Val	Ala Ala Trp Arg Glu Arg

	805	810	815
Tyr Glu Asp Ser Gln Gln Glu Glu Ala Gln Tyr Gly Ala Met Phe Gln			
820	825	830	
Glu Gln Leu Met Thr Leu Lys Glu Glu Cys Glu Lys Ala Arg Gln Glu			
835	840	845	
Leu Gln Glu Ala Lys Glu Lys Val Ala Gly Ile Glu Ser His Ser Glu			
850	855	860	
Leu Gln Ile Ser Arg Gln Gln Asn Glu Leu Ala Glu Leu His Ala Asn			
865	870	875	880
Leu Ala Arg Ala Leu Gln Gln Val Gln Glu Lys Glu Val Arg Ala Gln			
885	890	895	
Lys Leu Ala Asp Asp Leu Ser Thr Leu Gln Glu Lys Met Ala Ala Thr			
900	905	910	
Ser Lys Glu Val Ala Arg Leu Glu Thr Leu Val Arg Lys Ala Gly Glu			
915	920	925	
Gln Gln Glu Thr Ala Ser Arg Glu Leu Val Lys Glu Pro Ala Arg Ala			
930	935	940	
Gly Asp Arg Gln Pro Glu Trp Leu Glu Glu Gln Gln Gly Arg Gln Phe			
945	950	955	960
Cys Ser Thr Gln Ala Ala Leu Gln Ala Met Glu Arg Glu Ala Glu Gln			
965	970	975	
Met Gly Asn Glu Leu Glu Arg Leu Arg Ala Ala Leu Met Glu Ser Gln			
980	985	990	
Gly Gln Gln Glu Glu Arg Gly Gln Gln Glu Arg Glu Val Ala Arg			
995	1000	1005	
Leu Thr Gln Glu Arg Gly Arg Ala Gln Ala Asp Leu Ala Leu Glu Lys			
1010	1015	1020	
Ala Ala Arg Ala Glu Leu Glu Met Arg Leu Gln Asn Ala Leu Asn Glu			
1025	1030	1035	1040
Gln Arg Val Glu Phe Ala Thr Leu Gln Glu Ala Leu Ala His Ala Leu			
1045	1050	1055	
Thr Glu Lys Glu Gly Lys Asp Gln Glu Leu Ala Lys Leu Arg Gly Leu			
1060	1065	1070	
Glu Ala Ala Gln Ile Lys Glu Leu Glu Glu Leu Arg Gln Thr Val Lys			
1075	1080	1085	
Gln Leu Lys Glu Gln Leu Ala Lys Lys Glu Lys Glu His Ala Ser Gly			
1090	1095	1100	
Ser Gly Ala Gln Ser Glu Ala Ala Gly Arg Thr Glu Pro Thr Gly Pro			
1105	1110	1115	1120
Lys Leu Glu Ala Leu Arg Ala Glu Val Ser Lys Leu Glu Gln Gln Cys			
1125	1130	1135	
Gln Lys Gln Glu Gln Ala Asp Ser Leu Glu Arg Ser Leu Glu Ala			
1140	1145	1150	
Glu Arg Ala Ser Arg Ala Glu Arg Asp Ser Ala Leu Glu Thr Leu Gln			
1155	1160	1165	
Gly Gln Leu Glu Glu Lys Ala Gln Glu Leu Gly His Ser Gln Ser Ala			
1170	1175	1180	
Leu Ala Ser Ala Gln Arg Glu Leu Ala Ala Phe Arg Thr Lys Val Gln			
1185	1190	1195	1200
Asp His Ser Lys Ala Glu Asp Glu Trp Lys Ala Gln Val Ala Arg Gly			
1205	1210	1215	
Arg Gln Glu Ala Glu Arg Lys Asn Ser Leu Ile Ser Ser Leu Glu Glu			
1220	1225	1230	
Glu Val Ser Ile Leu Asn Arg Gln Val Leu Glu Lys Glu Gly Glu Ser			
1235	1240	1245	
Lys Glu Leu Lys Arg Leu Val Met Ala Glu Ser Glu Lys Ser Gln Lys			
1250	1255	1260	
Leu Glu Glu Arg Leu Arg Leu Leu Gln Ala Glu Thr Ala Ser Asn Ser			
1265	1270	1275	1280
Ala Arg Ala Ala Glu Arg Ser Ser Ala Leu Arg Glu Glu Val Gln Ser			
1285	1290	1295	
Leu Arg Glu Glu Ala Glu Lys Gln Arg Val Ala Ser Glu Asn Leu Arg			

1300	1305	1310
Gln Glu Leu Thr Ser Gln Ala Glu Arg Ala Glu Glu		Gly Gln Glu
1315	1320	1325
Leu Lys Ala Trp Gln Glu Lys Phe Phe Gln Lys Glu	Gln Ala	Leu Ser
1330	1335	1340
Thr Leu Gln Leu Glu His Thr Ser Thr Gln Ala Leu Val	Ser Glu	Leu
1345	1350	1355
Leu Pro Ala Lys His Leu Cys Gln Gln Leu Gln Ala Glu	Gln Ala Ala	
1365	1370	1375
Ala Glu Lys Arg His Arg Glu Glu Leu Glu Gln Ser Lys	Gln Ala Ala	
1380	1385	1390
Gly Gly Leu Arg Ala Glu Leu Leu Arg Ala Gln Arg Glu	Leu Gly Glu	
1395	1400	1405
Leu Ile Pro Leu Arg Gln Lys Val Ala Glu Gln Glu Arg	Thr Ala Gln	
1410	1415	1420
Gln Leu Arg Ala Glu Lys Ala Ser Tyr Ala Glu Gln Leu	Ser Met	Leu
1425	1430	1435
Lys Lys Ala His Gly Leu Leu Ala Glu Glu Asn Arg Gly	Leu Gly Glu	
1445	1450	1455
Arg Ala Asn Leu Gly Arg Gln Phe Leu Glu Val Glu Leu	Asp Gln Ala	
1460	1465	1470
Arg Glu Lys Tyr Val Gln Glu Leu Ala Ala Val Arg Ala	Asp Ala Glu	
1475	1480	1485
Thr Arg Leu Ala Glu Val Gln Arg Glu Ala Gln Ser Thr	Ala Arg Glu	
1490	1495	1500
Leu Glu Val Met Thr Ala Lys Tyr Glu Gly Ala Lys Val	Lys Val Lys Val	Leu
1505	1510	1515
Glu Glu Arg Gln Arg Phe Gln Glu Glu Arg Gln Lys Leu	Thr Ala Gln	
1525	1530	1535
Val Glu Gln Leu Glu Val Phe Gln Arg Glu Gln Thr Lys	Gln Val Glu	
1540	1545	1550
Glu Leu Ser Lys Lys Leu Ala Asp Ser Asp Gln Ala Ser	Lys Val Gln	
1555	1560	1565
Gln Gln Lys Leu Lys Ala Val Gln Ala Gln Gly Glu Ser	Gln Gln Gln	
1570	1575	1580
Glu Ala Gln Arg Leu Gln Ala Gln Leu Asn Glu Leu Gln	Ala Gln Leu	
1585	1590	1595
Ser Gln Lys Glu Gln Ala Ala Glu His Tyr Lys Leu Gln	Met Glu Lys	
1605	1610	1615
Ala Lys Thr His Tyr Asp Ala Lys Lys Gln Gln Asn Gln	Glu Leu Gln	
1620	1625	1630
Glu Gln Leu Arg Ser Leu Glu Gln Leu Gln Lys Glu Asn	Lys Glu Leu	
1635	1640	1645
Arg Ala Glu Ala Glu Arg Leu Gly His Glu Leu Gln Gln	Ala Gly Leu	
1650	1655	1660
Lys Thr Lys Glu Ala Glu Gln Thr Cys Arg His Leu Thr	Ala Gln Val	
1665	1670	1675
Arg Ser Leu Glu Ala Gln Val Ala His Ala Asp Gln Gln	Leu Arg Asp	
1685	1690	1695
Leu Gly Lys Phe Gln Val Ala Thr Asp Ala Leu Lys Ser	Arg Glu Pro	
1700	1705	1710
Gln Ala Lys Pro Gln Leu Asp Leu Ser Ile Asp Ser	Leu Asp Leu Ser	
1715	1720	1725
Cys Glu Glu Gly Thr Pro Leu Ser Ile Thr Ser Lys Leu	Pro Arg Thr	
1730	1735	1740
Gln Pro Asp Gly Thr Ser Val Pro Gly Glu Pro Ala Ser	Pro Ile Ser	
1745	1750	1755
Gln Arg Leu Pro Pro Lys Val Glu Ser Leu Glu Ser Leu	Tyr Phe Thr	
1765	1770	1775
Pro Ile Pro Ala Arg Ser Gln Ala Pro Leu Glu Ser Ser	Leu Asp Ser	
1780	1785	1790
Leu Gly Asp Val Phe Gln Asp Ser Gly Arg Lys Thr Arg	Ser Ala Arg	

1795	1800	1805
Arg Arg Thr Thr Gln Ile Ile Asn Ile Thr Met	Thr Lys Lys Leu Asp	
1810	1815	1820
Val Glu Glu Pro Asp Ser Ala Asn Ser Ser	Phe Tyr Ser Thr Arg Ser	
1825	1830	1835
Ala Pro Ala Ser Gln Ala Ser Leu Arg	Ala Thr Ser Ser Thr Gln Ser	1840
1845	1850	1855
Leu Ala Arg Leu Gly Ser Pro Asp Tyr Gly Asn Ser Ala	Leu Leu Ser	
1860	1865	1870
Leu Pro Gly Tyr Arg Pro Thr Thr Arg Ser Ser Ala	Arg Arg Ser Gln	
1875	1880	1885
Ala Gly Val Ser Ser Gly Ala Pro Pro Gly Arg Asn Ser	Phe Tyr Met	
1890	1895	1900
Gly Thr Cys Gln Asp Glu Pro Glu Gln Leu Asp Asp Trp Asn Arg Ile		
1905	1910	1915
Ala Glu Leu Gln Gln Arg Asn Arg Val Cys Pro Pro His Leu Lys Thr		1920
1925	1930	1935
Cys Tyr Pro Leu Glu Ser Arg Pro Ser Leu Ser Leu Gly Thr Ile Thr		
1940	1945	1950
Asp Glu Glu Met Lys Thr Gly Asp Pro Gln Glu Thr Leu Arg Arg Ala		
1955	1960	1965
Ser Met Gln Pro Ile Gln Ile Ala Glu Gly Thr Gly Ile Thr Thr Arg		
1970	1975	1980
Gln Gln Arg Lys Arg Val Ser Leu Glu Pro His Gln Gly Pro Gly Thr		
1985	1990	1995
Pro Glu Ser Lys Lys Ala Thr Ser Cys Phe Pro Arg Pro Met Thr Pro		2000
2005	2010	2015
Arg Asp Arg His Glu Gly Arg Lys Gln Ser Thr Thr Glu Ala Gln Lys		
2020	2025	2030
Lys Ala Ala Pro Ala Ser Thr Lys Gln Ala Asp Arg Arg Gln Ser Met		
2035	2040	2045
Ala Phe Ser Ile Leu Asn Thr Pro Lys Lys Leu Gly Asn Ser Leu Leu		
2050	2055	2060
Arg Arg Gly Ala Ser Lys Lys Ala Leu Ser Lys Ala Ser Pro Asn Thr		
2065	2070	2075
Arg Ser Gly Thr Arg Arg Ser Pro Arg Ile Ala Thr Thr Thr Ala Ser		
2085	2090	2095
Ala Ala Thr Ala Ala Ile Gly Ala Thr Pro Arg Ala Lys Gly Lys		
2100	2105	2110
Ala Lys His		
2115		

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<211> 4096
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<213> Human

<220>
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<223> Xaa = Any Amino Acid

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Glu Thr Leu Ser Ala Ala Asp Arg Cys Gly Ala Ala Leu Ala Gly His
20 25 30
Gln Leu Ile Arg Gly Leu Gly Gln Glu Cys Val Leu Ser Ser Ser Pro
35 40 45
Ala Val Leu Ala Leu Gln Thr Ser Leu Val Phe Ser Arg Asp Phe Gly
50 55 60
Leu Leu Val Phe Val Arg Lys Ser Leu Asn Ser Ile Glu Phe Arg Glu

65	70	75	80
Cys Arg Glu Glu Ile Leu Lys Phe Leu Cys Ile Phe Leu Glu Lys Met			
85	90	95	
Gly Gln Lys Ile Ala Pro Tyr Ser Val Glu Ile Lys Asn Thr Cys Thr			
100	105	110	
Ser Val Tyr Thr Lys Asp Arg Ala Ala Lys Cys Lys Ile Pro Ala Leu			
115	120	125	
Asp Leu Leu Ile Lys Leu Leu Gln Thr Phe Arg Ser Ser Arg Leu Met			
130	135	140	
Asp Glu Phe Lys Ile Gly Glu Leu Phe Ser Lys Phe Tyr Gly Glu Leu			
145	150	155	160
Ala Leu Lys Lys Ile Pro Asp Thr Val Leu Glu Lys Val Tyr Glu			
165	170	175	
Leu Leu Gly Leu Leu Gly Glu Val His Pro Ser Glu Met Ile Asn Asn			
180	185	190	
Ala Glu Asn Leu Phe Arg Ala Phe Leu Gly Glu Leu Lys Thr Gln Met			
195	200	205	
Thr Ser Ala Val Arg Glu Pro Lys Leu Pro Val Leu Ala Gly Cys Leu			
210	215	220	
Lys Gly Leu Ser Ser Leu Leu Cys Asn Phe Thr Lys Ser Met Glu Glu			
225	230	235	240
Asp Pro Gln Thr Ser Arg Glu Ile Phe Asn Phe Val Leu Lys Ala Ile			
245	250	255	
Arg Pro Gln Ile Asp Leu Lys Arg Tyr Ala Val Pro Ser Ala Gly Leu			
260	265	270	
Arg Leu Phe Ala Leu His Ala Ser Gln Phe Ser Thr Cys Leu Leu Asp			
275	280	285	
Asn Tyr Val Ser Leu Phe Glu Val Leu Ile Lys Trp Cys Ala His Thr			
290	295	300	
Asn Val Glu Leu Lys Lys Ala Ala Leu Ser Ala Leu Glu Ser Phe Leu			
305	310	315	320
Lys Gln Val Ser Asn Met Val Ala Lys Asn Ala Glu Met His Lys Asn			
325	330	335	
Lys Leu Gln Tyr Glu Met Glu Gln Phe Tyr Gly Ile Ile Arg Asn Val			
340	345	350	
Asp Ser Asn Asn Lys Glu Leu Ser Ile Ala Ile Arg Gly Tyr Gly Leu			
355	360	365	
Phe Ala Gly Pro Cys Lys Val Ile Asn Ala Lys Asp Val Asp Phe Met			
370	375	380	
Tyr Val Glu Leu Ile Gln Arg Cys Lys Gln Met Phe Leu Thr Gln Thr			
385	390	395	400
Asp Thr Gly Asp Tyr Arg Val Tyr Gln Met Pro Ser Phe Leu Gln Ser			
405	410	415	
Val Ala Ser Val Leu Leu Tyr Leu Asp Thr Val Pro Glu Val Tyr Thr			
420	425	430	
Pro Val Leu Glu His Leu Val Val Met Gln Ile Asp Ser Phe Pro Gln			
435	440	445	
Tyr Ser Pro Lys Met Gln Leu Val Cys Cys Arg Ala Ile Val Lys Val			
450	455	460	
Phe Leu Ala Leu Ala Ala Lys Gly Pro Val Leu Arg Asn Cys Ile Ser			
465	470	475	480
Thr Val Val His Gln Gly Leu Ile Arg Ile Cys Ser Lys Pro Val Val			
485	490	495	
Leu Pro Lys Gly Pro Glu Ser Glu Ser Glu Asp His Arg Ala Ser Gly			
500	505	510	
Glu Val Arg Thr Gly Lys Trp Lys Val Pro Thr Tyr Lys Asp Tyr Val			
515	520	525	
Asp Leu Phe Arg His Leu Leu Ser Ser Asp Gln Met Met Asp Ser Ile			
530	535	540	
Leu Ala Asp Glu Ala Phe Phe Ser Val Asn Ser Ser Ser Glu Ser Leu			
545	550	555	560
Asn His Leu Leu Tyr Asp Glu Phe Val Lys Ser Val Leu Lys Ile Val			

	565	570	575													
Glu	Lys	Leu	Asp	Leu	Thr	Leu	Glu	Ile	Gln	Thr	Val	Gly	Glu	Gln	Glu	
			580		585							590				
Asn	Gly	Asp	Glu	Ala	Pro	Gly	Val	Trp	Met	Ile	Pro	Thr	Ser	Asp	Pro	
			595		600							605				
Ala	Ala	Asn	Leu	His	Pro	Ala	Lys	Pro	Lys	Asp	Phe	Ser	Ala	Phe	Ile	
			610		615							620				
Asn	Leu	Val	Glu	Phe	Cys	Arg	Glu	Ile	Leu	Pro	Glu	Lys	Gln	Ala	Glu	
			625		630						635			640		
Phe	Phe	Glu	Pro	Trp	Val	Tyr	Ser	Phe	Ser	Tyr	Glu	Leu	Ile	Leu	Gln	
			645		650						655					
Ser	Thr	Arg	Leu	Pro	Leu	Ile	Ser	Gly	Phe	Tyr	Lys	Leu	Leu	Ser	Ile	
			660		665						670					
Thr	Val	Arg	Asn	Ala	Lys	Lys	Ile	Lys	Tyr	Phe	Glu	Gly	Val	Ser	Pro	
			675		680						685					
Lys	Ser	Leu	Lys	His	Ser	Pro	Glu	Asp	Pro	Glu	Lys	Tyr	Ser	Cys	Phe	
			690		695						700					
Ala	Leu	Phe	Val	Lys	Phe	Gly	Lys	Glu	Val	Ala	Val	Lys	Met	Lys	Gln	
			705		710						715			720		
Tyr	Lys	Asp	Glu	Leu	Leu	Ala	Ser	Cys	Leu	Thr	Phe	Leu	Leu	Ser	Leu	
			725		730							735				
Pro	His	Asn	Ile	Ile	Glu	Leu	Asp	Val	Arg	Ala	Tyr	Val	Pro	Ala	Leu	
												740		745		
													750			
Gln	Met	Ala	Phe	Lys	Leu	Gly	Leu	Ser	Tyr	Thr	Pro	Leu	Ala	Glu	Val	
												755		760		
													765			
Gly	Leu	Asn	Ala	Leu	Glu	Glu	Trp	Ser	Ile	Tyr	Ile	Asp	Arg	His	Val	
												770		775		
													780			
Met	Gln	Pro	Tyr	Tyr	Lys	Asp	Ile	Leu	Pro	Cys	Leu	Asp	Gly	Tyr	Leu	
												785		790		
													795		800	
Lys	Thr	Ser	Ala	Leu	Ser	Asp	Glu	Thr	Lys	Asn	Asn	Trp	Glu	Val	Ser	
												805		810		
														815		
Ala	Leu	Ser	Arg	Ala	Ala	Gln	Lys	Gly	Phe	Asn	Lys	Val	Val	Leu	Lys	
												820		825		
													830			
His	Leu	Lys	Lys	Thr	Lys	Asn	Leu	Ser	Ser	Asn	Glu	Ala	Ile	Ser	Leu	
												835		840		
													845			
Glu	Glu	Ile	Arg	Ile	Arg	Val	Val	Gln	Met	Leu	Gly	Ser	Leu	Gly	Gly	
											850		855		860	
Gln	Ile	Asn	Lys	Asn	Leu	Leu	Thr	Val	Thr	Ser	Ser	Asp	Glu	Met	Met	
												865		870		
													875		880	
Lys	Ser	Tyr	Val	Ala	Trp	Asp	Arg	Glu	Lys	Arg	Leu	Ser	Phe	Ala	Val	
												885		890		
														895		
Pro	Phe	Arg	Glu	Met	Lys	Pro	Val	Ile	Phe	Leu	Asp	Val	Phe	Leu	Pro	
											900		905		910	
Arg	Val	Thr	Glu	Leu	Ala	Leu	Thr	Ala	Ser	Asp	Arg	Gln	Thr	Lys	Val	
											915		920		925	
Ala	Ala	Cys	Glu	Leu	Leu	His	Ser	Met	Val	Met	Phe	Met	Leu	Gly	Lys	
											930		935		940	
Ala	Thr	Gln	Met	Pro	Glu	Gly	Gly	Gln	Gly	Ala	Pro	Pro	Met	Tyr	Gln	
											945		950		955	
															960	
Leu	Tyr	Lys	Arg	Thr	Phe	Pro	Val	Leu	Leu	Arg	Leu	Ala	Cys	Asp	Val	
											965		970		975	
Asp	Gln	Val	Thr	Arg	Gln	Leu	Tyr	Glu	Pro	Leu	Val	Met	Gln	Leu	Ile	
											980		985		990	
His	Trp	Phe	Thr	Asn	Asn	Lys	Lys	Phe	Glu	Ser	Gln	Asp	Thr	Val	Ser	
											995		1000		1005	
Leu	Leu	Glu	Ala	Ile	Leu	Asp	Gly	Ile	Val	Asp	Pro	Val	Asp	Ser	Thr	
											1010		1015		1020	
Leu	Arg	Asp	Phe	Cys	Gly	Arg	Cys	Ile	Arg	Glu	Phe	Leu	Lys	Trp	Ser	
											1025		1030		1035	
															1040	
Ile	Lys	Gln	Ile	Thr	Pro	Gln	Gln	Glu	Lys	Ser	Pro	Val	Asn	Thr		
											1045		1050		1055	
Lys	Ser	Leu	Phe	Lys	Arg	Leu	Tyr	Ser	Leu	Ala	Leu	His	Pro	Asn	Ala	

1060	1065	1070
Phe Lys Arg Leu Gly Ala Ser	Leu Ala Phe Asn Asn	Ile Tyr Arg Glu
1075	1080	1085
Phe Arg Glu Glu Glu Ser	Leu Val Glu Gln Phe Val	Phe Glu Ala Leu
1090	1095	1100
Val Ile Tyr Met Glu Ser	Leu Ala Leu Ala His Ala Asp Glu Lys	Ser
1105	1110	1115
Leu Gly Thr Ile Gln Gln Cys Cys Asp	Ala Ile Asp His Leu Cys Arg	Arg
1125	1130	1135
Ile Ile Glu Lys Lys His Val Ser	Leu Asn Lys Ala Lys Lys Arg Arg	
1140	1145	1150
Leu Pro Arg Gly Phe Pro Pro Ser	Ala Ser Leu Cys Leu Leu Asp Leu	
1155	1160	1165
Val Lys Trp Leu Leu Ala His Cys Gly Arg Pro	Gln Thr Glu Cys Arg	
1170	1175	1180
His Lys Ser Ile Glu Leu Phe Tyr Lys Phe Val	Pro Leu Leu Pro Gly	
1185	1190	1195
Asn Arg Ser Pro Asn Leu Trp Leu Lys Asp	Val Leu Lys Glu Glu Gly	
1205	1210	1215
Val Ser Phe Leu Ile Asn Thr Phe Glu Gly Gly	Cys Gly Gln Pro	
1220	1225	1230
Ser Gly Ile Leu Ala Gln Pro Thr Leu Leu Tyr	Leu Arg Gly Pro Phe	
1235	1240	1245
Ser Leu Gln Ala Thr Leu Cys Trp Leu Asp	Leu Leu Ala Ala Leu	
1250	1255	1260
Glu Cys Tyr Asn Thr Phe Ile Gly Glu Arg Thr	Val Gly Ala Leu Gln	
1265	1270	1275
Val Leu Gly Thr Glu Ala Gln Ser Ser	Leu Leu Lys Ala Val Ala Phe	
1285	1290	1295
Phe Leu Glu Ser Ile Ala Met His Asp	Ile Ile Ala Ala Glu Lys Cys	
1300	1305	1310
Phe Gly Thr Gly Ala Ala Gly Asn Arg Thr Ser	Pro Gln Glu Gly Glu	
1315	1320	1325
Arg Tyr Asn Tyr Ser Lys Cys Thr Val Val Val	Arg Ile Met Glu Phe	
1330	1335	1340
Thr Thr Thr Leu Leu Asn Thr Ser Pro Glu	Gly Trp Lys Leu Leu Lys	
1345	1350	1355
Lys Asp Leu Cys Asn Thr His Leu Met Arg Val	Leu Val Gln Thr Leu	
1365	1370	1375
Cys Glu Pro Ala Ser Ile Gly Phe Asn	Ile Gly Asp Val Gln Val Met	
1380	1385	1390
Ala His Leu Pro Asp Val Cys Val Asn	Leu Met Lys Ala Leu Lys Met	
1395	1400	1405
Ser Pro Tyr Lys Asp Ile Leu Glu Thr His	Leu Arg Glu Lys Ile Thr	
1410	1415	1420
Ala Gln Ser Ile Glu Glu Leu Cys Ala Val	Asn Leu Tyr Gly Pro Asp	
1425	1430	1435
Ala Gln Val Asp Arg Ser Arg Leu Ala Ala Val	Val Ser Ala Cys Lys	
1445	1450	1455
Gln Leu His Arg Ala Gly Leu Leu His Asn	Ile Leu Pro Ser Gln Ser	
1460	1465	1470
Thr Asp Leu His His Ser Val Gly	Thr Glu Leu Leu Ser Leu Val Tyr	
1475	1480	1485
Lys Gly Ile Ala Pro Gly Asp Glu Arg Gln Cys	Leu Pro Ser Leu Asp	
1490	1495	1500
Leu Ser Cys Lys Gln Leu Ala Ser Gly	Leu Leu Ala Phe Ala	
1505	1510	1515
Phe Gly Gly Leu Cys Glu Arg Leu Val Ser	Leu Leu Leu Asn Pro Ala	
1525	1530	1535
Val Leu Ser Thr Ala Ser Leu Gly Ser Ser Gln	Gly Ser Val Ile His	
1540	1545	1550
Phe Ser His Gly Glu Tyr Phe Tyr Ser Leu Phe	Ser Glu Thr Ile Asn	

1555	1560	1565
Thr Glu Leu Leu Lys Asn Leu Asp Leu Ala Val Leu	Glu Leu Met Gln	
1570	1575	1580
Ser Ser Val Asp Asn Thr Lys Met Val Ser Ala Val Leu Asn Gly Met		
1585	1590	1595
Leu Asp Gln Ser Phe Arg Glu Arg Ala Asn Gln Lys His Gln Gly Leu		1600
1605	1610	1615
Lys Leu Ala Thr Thr Ile Leu Gln His Trp Lys Lys Cys Asp Ser Trp		
1620	1625	1630
Trp Ala Lys Asp Ser Pro Leu Glu Thr Lys Met Ala Val Leu Ala Leu		
1635	1640	1645
Leu Ala Lys Ile Leu Gln Ile Asp Ser Ser Val Ser Phe Asn Thr Ser		
1650	1655	1660
His Gly Ser Phe Pro Glu Val Phe Thr Thr Tyr Ile Ser Leu Leu Ala		
1665	1670	1675
Asp Thr Lys Leu Asp Leu His Leu Lys Gly Gln Ala Val Thr Leu Leu		
1685	1690	1695
Pro Phe Phe Thr Ser Leu Thr Gly Gly Ser Leu Glu Glu Leu Arg Arg		
1700	1705	1710
Val Leu Glu Gln Leu Ile Val Ala His Phe Pro Met Gln Ser Arg Glu		
1715	1720	1725
Phe Pro Pro Gly Thr Pro Arg Phe Asn Asn Tyr Val Asp Cys Met Lys		
1730	1735	1740
Lys Phe Leu Asp Ala Leu Glu Leu Ser Gln Ser Pro Met Leu Leu Glu		
1745	1750	1755
Leu Met Thr Glu Val Leu Cys Arg Glu Gln Gln His Val Met Glu Glu		
1765	1770	1775
Leu Phe Gln Ser Ser Phe Arg Arg Ile Ala Arg Arg Gly Ser Cys Val		
1780	1785	1790
Thr Gln Val Gly Leu Leu Glu Ser Val Tyr Glu Met Phe Arg Lys Asp		
1795	1800	1805
Asp Pro Arg Leu Ser Phe Thr Arg Gln Ser Phe Val Asp Arg Ser Leu		
1810	1815	1820
Leu Thr Leu Leu Trp His Cys Ser Leu Asp Ala Leu Arg Glu Phe Phe		
1825	1830	1835
Ser Thr Ile Val Val Asp Ala Ile Asp Val Leu Lys Ser Arg Phe Thr		
1845	1850	1855
Lys Leu Asn Glu Ser Thr Phe Asp Thr Gln Ile Thr Lys Lys Met Gly		
1860	1865	1870
Tyr Tyr Ile Leu Asp Val Met Tyr Ser Arg Leu Pro Lys Asp Asp		
1875	1880	1885
Val His Ala Lys Glu Ser Lys Ile Asn Gln Val Phe His Gly Ser Cys		
1890	1895	1900
Ile Thr Glu Gly Asn Glu Leu Thr Lys Thr Leu Ile Lys Leu Cys Tyr		
1905	1910	1915
Asp Ala Phe Thr Glu Asn Met Ala Gly Glu Asn Gln Leu Leu Glu Arg		
1925	1930	1935
Arg Arg Leu Tyr His Cys Ala Ala Tyr Asn Cys Ala Ile Ser Val Ile		
1940	1945	1950
Cys Cys Val Phe Asn Glu Leu Lys Phe Tyr Gln Gly Phe Leu Phe Ser		
1955	1960	1965
Glu Lys Pro Glu Lys Asn Leu Leu Ile Phe Glu Asn Leu Ile Asp Leu		
1970	1975	1980
Lys Arg Arg Tyr Asn Phe Pro Val Glu Val Glu Val Pro Met Glu Arg		
1985	1990	1995
Lys Lys Lys Tyr Ile Glu Ile Arg Lys Glu Ala Arg Glu Ala Ala Asn		2000
2005	2010	2015
Gly Asp Ser Asp Gly Pro Ser Tyr Met Ser Ser Leu Ser Tyr Leu Ala		
2020	2025	2030
Asp Ser Thr Leu Ser Glu Glu Met Ser Gln Phe Asp Phe Ser Thr Gly		
2035	2040	2045
Val Gln Ser Tyr Ser Tyr Ser Gln Asp Pro Arg Pro Ala Thr Gly		

2050	2055	2060
Arg	Phe	Arg
Arg	Arg	Arg
Arg	Glu	Gln
Glu	Gln	Arg
Asp	Pro	Thr
Pro	Thr	Val
His	Asp	Asp
Asp	Asp	Val
2065	2070	2075
Leu	Glu	Leu
Glu	Glu	Met
Met	Asp	Glu
Leu	Asn	Arg
Arg	His	Glu
Gly	Cys	Met
Met	Ala	Pro
2085	2090	2095
Leu	Thr	Ala
Ala	Leu	Val
Leu	Val	Lys
Lys	His	Met
His	Arg	Ser
Ser	Leu	Gly
Gly	Pro	Pro
Pro	Pro	Gln
2100	2105	2110
Gly	Glu	Asp
Asp	Ser	Val
Val	Pro	Arg
Pro	Arg	Asp
Asp	Leu	Pro
Leu	Pro	Ser
Ser	Trp	Trp
Trp	Met	Lys
Lys	Phe	
2115	2120	2125
Leu	His	Gly
Gly	Lys	Leu
Leu	Gly	Asn
Asn	Pro	Ile
Ile	Val	Pro
Pro	Leu	Asn
Leu	Asn	Ile
Ile	Arg	Leu
2130	2135	2140
Phe	Leu	Ala
Ala	Lys	Leu
Leu	Val	Ile
Ile	Asn	Thr
Thr	Glu	Glu
Glu	Val	Val
Val	Phe	Arg
Arg	Pro	Tyr
2145	2150	2155
Ala	Lys	His
His	Trp	Leu
Leu	Ser	Pro
Pro	Leu	Leu
Gln	Leu	Ala
Ala	Ala	Ser
Ser	Glu	Asn
Asn	2165	2170
Asn	Gly	Gly
Gly	Ile	His
His	Tyr	Met
Met	Val	Val
Val	Glu	Ile
Ile	Val	Ala
Ala	Thr	
2180	2185	2190
Ile	Leu	Ser
Ser	Trp	Thr
Trp	Gly	Leu
Leu	Ala	Thr
Thr	Pro	Thr
Gly	Val	Gly
Val	Pro	Lys
Lys	Asp	
Glu	Val	Leu
Leu	Ala	Asn
Asn	Arg	Leu
Leu	Asn	Phe
Phe	Leu	Met
Met	Lys	His
His	Val	Phe
2210	2215	2220
His	Pro	Lys
Lys	Arg	Ala
Ala	Val	Phe
Phe	Arg	His
His	Asn	Leu
Leu	Glu	Ile
Ile	Ile	Lys
Lys	Thr	
2225	2230	2235
Leu	Val	Glu
Glu	Cys	Trp
Trp	Lys	Asp
Asp	Cys	Leu
Leu	Ser	Ile
Ile	Pro	Tyr
Tyr	Arg	Leu
Leu	Ile	
2245	2250	2255
Phe	Glu	Lys
Glu	Phe	Ser
Ser	Gly	Lys
Lys	Asp	Pro
Pro	Asn	Ser
Ser	Lys	Asp
Asp	Asn	Asn
Asn	Ser	Ser
Ser	Val	
2260	2265	2270
Gly	Ile	Gln
Gln	Leu	Leu
Leu	Gly	Ile
Ile	Val	Met
Met	Ala	Asn
Asn	Asp	Leu
Leu	Pro	Pro
Pro	Pro	Tyr
Tyr	Arg	Leu
Leu	Ile	
2275	2280	2285
Asp	Pro	Gln
Gln	Cys	Gly
Gly	Ile	Gln
Gln	Ser	Ser
Ser	Glu	Tyr
Tyr	Phe	Gln
Gln	Ala	Leu
Leu	Val	
2290	2295	2300
Asn	Asn	Met
Met	Ser	Phe
Phe	Val	Arg
Arg	Tyr	Lys
Lys	Glu	Val
Val	Tyr	Ala
Ala	Ala	Ala
Ala	Ala	Ala
2305	2310	2315
Glu	Val	Leu
Leu	Gly	Ile
Ile	Leu	Arg
Arg	Tyr	Val
Val	Met	Glu
Glu	Arg	Lys
Lys	Asn	Ile
Ile	2325	2330
Leu	Glu	Glu
Glu	Ser	Leu
Leu	Cys	Glu
Glu	Leu	Val
Val	Ala	Lys
Lys	Gln	Leu
Leu	Lys	Gln
Gln	His	
2340	2345	2350
Gln	Asn	Thr
Thr	Met	Glu
Glu	Asp	Lys
Lys	Phe	Ile
Ile	Val	Cys
Cys	Leu	Asn
Asn	Lys	Val
Val	Thr	
2355	2360	2365
Lys	Ser	Phe
Phe	Pro	Pro
Pro	Leu	Ala
Ala	Asp	Arg
Arg	Phe	Met
Met	Asn	Ala
Ala	Val	Phe
Phe	Phe	
2370	2375	2380
Leu	Leu	Pro
Pro	Phe	His
His	Gly	Val
Val	Leu	Lys
Lys	Thr	Leu
Leu	Cys	Glu
Glu	Val	Val
Val	Leu	
2385	2390	2395
Val	Leu	Cys
Cys	Arg	Val
Val	Glu	Gly
Gly	Met	Thr
Thr	Glu	Leu
Leu	Tyr	Phe
Phe	Gln	Leu
Leu	Lys	
2405	2410	2415
Ser	Lys	Asp
Asp	Phe	Val
Val	Gln	Val
Val	Met	Arg
Arg	His	Arg
His	Asp	Glu
Glu	Arg	Arg
Arg	Gln	Lys
Lys	2420	2425
Ser	Val	2430
Val	Cys	Leu
Cys	Leu	Asp
Asp	Ile	Ile
Ile	Tyr	Lys
Lys	Met	Met
Met	Pro	Lys
Lys	Leu	Lys
Leu	Pro	Val
2435	2440	2445
Glu	Leu	Arg
Leu	Glu	Leu
Leu	Asn	Pro
Pro	Val	Val
Val	Glu	Phe
Phe	Val	Ser
Ser	His	Pro
Pro	2450	2455
Ser	2460	
Thr	Thr	Cys
Cys	Arg	Glu
Glu	Gln	Met
Met	Tyr	Asn
Asn	Ile	Leu
Leu	Met	Trp
Trp	Ile	His
His	2465	2470
Asp	Asn	Tyr
Tyr	Arg	Asp
Asp	Pro	Glu
Glu	Thr	Asp
Asp	Asn	Asp
Asp	Ser	Gln
Glu	2485	2490
Asn	Ile	Phe
Phe	Lys	Leu
Leu	Ala	Lys
Lys	Asp	Val
Val	Ile	Gln
Gln	Gly	Leu
Leu	Ile	Asp
Asp	Glu	
2500	2505	2510
Asn	Pro	Gly
Gly	Leu	Gln
Gln	Leu	Ile
Ile	Ile	Arg
Arg	Asn	Phe
Phe	Trp	Ser
Ser	His	Glu
Glu	Thr	
2515	2520	2525
Arg	Leu	Pro
Pro	Ser	Asn
Asn	Thr	Leu
Leu	Asp	Arg
Arg	Leu	Leu
Leu	Ala	Leu
Leu	Leu	Asn
Asn	Ser	Leu
Leu	2530	2535
Tyr	Ser	Pro
Pro	Lys	Ile
Ile	Glu	Val
Val	His	Phe
Phe	Leu	Ser
Ser	Leu	Ala
Ala	Thr	Asn
Asn	Phe	

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Leu Leu Glu Met Thr Ser Met Ser Pro Asp Tyr Pro Asn Pro Met Phe			
2565	2570	2575	
Glu His Pro Leu Ser Glu Cys Glu Phe Gln Glu Tyr Thr Ile Asp Ser			
2580	2585	2590	
Asp Trp Arg Phe Arg Ser Thr Val Leu Thr Pro Met Phe Val Glu Thr			
2595	2600	2605	
Gln Ala Ser Gln Gly Thr Leu Gln Thr Arg Thr Gln Glu Gly Ser Leu			
2610	2615	2620	
Ser Ala Arg Trp Pro Val Ala Gly Gln Ile Arg Ala Thr Gln Gln Gln			
2625	2630	2635	2640
His Asp Phe Thr Leu Thr Gln Thr Ala Asp Gly Arg Ser Ser Phe Asp			
2645	2650	2655	
Trp Leu Thr Gly Ser Ser Thr Asp Pro Leu Val Asp His Thr Ser Pro			
2660	2665	2670	
Ser Ser Asp Ser Leu Leu Phe Ala His Lys Arg Ser Glu Arg Leu Gln			
2675	2680	2685	
Arg Ala Pro Leu Lys Ser Val Gly Pro Asp Phe Gly Lys Lys Arg Leu			
2690	2695	2700	
Gly Leu Pro Gly Asp Glu Val Asp Asn Lys Val Lys Gly Ala Ala Gly			
2705	2710	2715	2720
Arg Thr Asp Leu Leu Arg Leu Arg Arg Phe Met Arg Asp Gln Glu			
2725	2730	2735	
Lys Leu Ser Leu Met Tyr Ala Arg Lys Gly Val Ala Glu Gln Lys Arg			
2740	2745	2750	
Glu Lys Glu Ile Lys Ser Glu Leu Lys Met Lys Gln Asp Ala Gln Val			
2755	2760	2765	
Val Leu Tyr Arg Ser Tyr Arg His Gly Asp Leu Pro Asp Ile Gln Ile			
2770	2775	2780	
Lys His Ser Ser Leu Ile Thr Pro Leu Gln Ala Val Ala Gln Arg Asp			
2785	2790	2795	2800
Pro Ile Ile Ala Lys Gln Leu Phe Ser Ser Leu Phe Ser Gly Ile Leu			
2805	2810	2815	
Lys Glu Met Asp Lys Phe Lys Thr Leu Ser Glu Lys Asn Asn Ile Thr			
2820	2825	2830	
Gln Lys Leu Leu Gln Asp Phe Asn Arg Phe Leu Asn Thr Thr Phe Ser			
2835	2840	2845	
Phe Phe Pro Pro Phe Val Ser Cys Ile Gln Asp Ile Ser Cys Gln His			
2850	2855	2860	
Ala Ala Leu Leu Ser Leu Asp Pro Ala Ala Val Ser Ala Gly Cys Leu			
2865	2870	2875	2880
Ala Ser Leu Gln Gln Pro Val Gly Ile Arg Leu Leu Glu Glu Ala Leu			
2885	2890	2895	
Leu Arg Leu Leu Pro Ala Glu Leu Pro Ala Lys Arg Val Arg Gly Lys			
2900	2905	2910	
Ala Arg Leu Pro Pro Asp Val Leu Arg Trp Val Glu Leu Ala Lys Leu			
2915	2920	2925	
Tyr Arg Ser Ile Gly Glu Tyr Asp Val Leu Arg Gly Ile Phe Thr Ser			
2930	2935	2940	
Glu Ile Gly Thr Lys Gln Ile Thr Gln Ser Ala Leu Leu Ala Glu Ala			
2945	2950	2955	2960
Arg Ser Asp Tyr Ser Glu Ala Ala Lys Gln Tyr Asp Glu Ala Leu Asn			
2965	2970	2975	
Lys Gln Asp Trp Val Asp Gly Glu Pro Thr Glu Ala Glu Lys Asp Phe			
2980	2985	2990	
Trp Glu Leu Ala Ser Leu Asp Cys Tyr Asn His Leu Ala Glu Trp Lys			
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Ser Leu Glu Tyr Cys Ser Thr Ala Ser Ile Asp Ser Glu Asn Pro Pro			
3010	3015	3020	
Asp Leu Asn Lys Ile Trp Ser Glu Pro Phe Tyr Gln Glu Thr Tyr Leu			
3025	3030	3035	3040
Pro Tyr Met Ile Arg Ser Lys Leu Lys Leu Leu Gln Gly Glu Ala			

3045	3050	3055
Asp Gln Ser Leu Leu Thr Phe Ile Asp Lys Ala Met His Gly Glu Leu		
3060	3065	3070
Gln Lys Ala Ile Leu Glu Leu His Tyr Ser Gln Glu Leu Ser Leu Leu		
3075	3080	3085
Tyr Leu Leu Gln Asp Asp Val Asp Arg Ala Lys Tyr Tyr Ile Gln Asn		
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Gly Ile Gln Ser Phe Met Gln Asn Tyr Ser Ser Ile Asp Val Leu Leu		
3105	3110	3115
His Gln Ser Arg Leu Thr Lys Leu Gln Ser Val Gln Ala Leu Thr Glu		
3125	3130	3135
Ile Gln Glu Phe Ile Ser Phe Ile Ser Lys Gln Gly Asn Leu Ser Ser		
3140	3145	3150
Gln Val Pro Leu Lys Arg Leu Leu Asn Thr Trp Thr Asn Arg Tyr Pro		
3155	3160	3165
Asp Ala Lys Met Asp Pro Met Asn Ile Trp Asp Asp Ile Ile Thr Asn		
3170	3175	3180
Arg Cys Phe Phe Leu Ser Lys Ile Glu Glu Lys Leu Thr Pro Leu Pro		
3185	3190	3195
Glu Asp Asn Ser Met Asn Val Asp Gln Asp Gly Asp Pro Ser Asp Arg		
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Met Glu Val Gln Glu Gln Glu Asp Ile Ser Ser Leu Ile Arg Ser		
3220	3225	3230
Cys Lys Phe Ser Met Lys Met Lys Met Ile Asp Ser Ala Arg Lys Gln		
3235	3240	3245
Asn Asn Phe Ser Leu Ala Met Lys Leu Leu Lys Glu Leu His Lys Glu		
3250	3255	3260
Ser Lys Thr Arg Asp Asp Trp Leu Val Ser Trp Val Gln Ser Tyr Cys		
3265	3270	3275
Arg Leu Ser His Cys Arg Ser Arg Ser Gln Gly Cys Ser Glu Gln Val		
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Leu Thr Val Leu Lys Thr Val Ser Leu Leu Asp Glu Asn Asn Val Ser		
3300	3305	3310
Ser Tyr Leu Xaa Lys Asn Ile Leu Ala Phe Arg Asp Gln Asn Ile Leu		
3315	3320	3325
Leu Gly Thr Thr Tyr Arg Ile Ile Ala Asn Ala Leu Ser Ser Glu Pro		
3330	3335	3340
Ala Cys Leu Ala Glu Ile Glu Glu Asp Lys Ala Arg Arg Ile Leu Glu		
3345	3350	3355
Leu Ser Gly Ser Ser Glu Asp Ser Glu Lys Val Ile Ala Gly Leu		
3365	3370	3375
Tyr Gln Arg Ala Phe Gln His Leu Ser Glu Ala Val Gln Ala Ala Glu		
3380	3385	3390
Glu Glu Ala Gln Pro Pro Ser Trp Ser Cys Gly Pro Ala Ala Gly Val		
3395	3400	3405
Ile Asp Ala Tyr Met Thr Leu Ala Asp Phe Cys Asp Gln Gln Leu Arg		
3410	3415	3420
Lys Glu Glu Glu Asn Ala Ser Val Thr Asp Ser Ala Glu Leu Gln Ala		
3425	3430	3435
Tyr Pro Ala Leu Val Val Glu Lys Met Leu Lys Ala Leu Lys Leu Asn		
3445	3450	3455
Ser Asn Glu Ala Arg Leu Lys Phe Pro Arg Leu Leu Gln Ile Ile Glu		
3460	3465	3470
Arg Tyr Pro Glu Glu Thr Leu Ser Leu Met Thr Lys Glu Ile Ser Ser		
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Val Pro Cys Trp Gln Phe Ile Ser Trp Ile Ser His Met Val Ala Leu		
3490	3495	3500
Leu Asp Lys Asp Gln Ala Val Ala Val Gln His Ser Val Glu Glu Ile		
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Thr Asp Asn Tyr Pro Gln Ala Ile Val Tyr Pro Phe Ile Ile Ser Ser		
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Glu Ser Tyr Ser Phe Lys Asp Thr Ser Thr Gly His Lys Asn Lys Glu		

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Phe Val Ala Arg Ile Lys Ser	Lys Leu Asp Gln Gly	Gly Val Ile Gln
3555	3560	3565
Asp Phe Ile Asn Ala Leu Asp Gln Leu Ser Asn Pro	Glu Leu Leu Phe	
3570	3575	3580
Lys Asp Trp Ser Asn Asp Val Arg Ala Glu	Leu Ala Lys Thr Pro	Val
3585	3590	3595
Asn Lys Lys Asn Ile Glu Lys Met Tyr Glu Arg Met	Tyr Ala Ala Leu	
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Gly Asp Pro Lys Ala Pro Gly Leu	Gly Ala Phe Arg Arg	Lys Phe Ile
3620	3625	3630
Gln Thr Phe Gly Lys Glu Phe Asp Lys His Phe	Gly Lys Gly Gly Ser	
3635	3640	3645
Lys Leu Leu Arg Met Lys Leu Ser Asp Phe Asn	Asp Ile Thr Asn Met	
3650	3655	3660
Leu Leu Leu Lys Met Asn Lys Asp Ser Lys	Pro Pro Gly Asn Leu	Lys
3665	3670	3675
Glu Cys Ser Pro Trp Met Ser Asp Phe	Lys Val Glu Phe Leu	Arg Asn
3685	3690	3695
Glu Leu Glu Ile Pro Gly Gln Tyr Asp	Gly Arg Gly Lys	Pro Leu Pro
3700	3705	3710
Glu Tyr His Val Arg Ile Ala	Gly Phe Asp Glu Arg Val	Thr Val Met
3715	3720	3725
Ala Ser Leu Arg Arg Pro Lys Arg Ile Ile Arg	Gly His Asp Glu	
3730	3735	3740
Arg Glu His Pro Phe Leu Val Lys Gly	Glu Asp Leu Arg Gln	Asp
3745	3750	3755
Gln Arg Val Glu Gln Leu Phe Gln Val Met	Asn Gly Ile Leu Ala	Gln
3765	3770	3775
Asp Ser Ala Cys Ser Gln Arg Ala	Leu Gln Leu Arg Thr	Tyr Ser Val
3780	3785	3790
Val Pro Met Thr Ser Ser Asp	Pro Arg Ala Pro Pro	Cys Glu Tyr Lys
3795	3800	3805
Asp Trp Leu Thr Lys Met Ser	Gly Lys His Asp Val	Gly Ala Tyr Met
3810	3815	3820
Leu Met Tyr Lys Gly Ala Asn Arg Thr	Glu Thr Val Thr	Ser Glu Arg
3825	3830	3835
Lys Arg Glu Ser Lys Val Pro Ala Asp	Leu Leu Lys Arg Ala	Phe Val
3845	3850	3855
Arg Met Ser Thr Ser Pro Glu Ala	Phe Leu Ala Leu Arg	Ser His Phe
3860	3865	3870
Ala Ser Ser His Ala Leu Ile	Cys Ile Ser His Trp	Ile Leu Gly Ile
3875	3880	3885
Gly Asp Arg His Leu Asn Asn Phe	Met Val Ala Met Glu	Thr Gly Gly
3890	3895	3900
Val Ile Gly Ile Asp Phe	Gly His Ala Phe	Gly Ser Ala Thr Gln Phe
3905	3910	3915
Leu Pro Val Pro Glu Leu Met Pro	Phe Arg Leu Thr Arg	Gln Phe Ile
3925	3930	3935
Asn Leu Met Leu Pro Met Lys	Glu Thr Gly Leu Met	Tyr Ser Ile Met
3940	3945	3950
Val His Ala Leu Arg Ala Phe	Arg Ser Asp Pro	Gly Leu Leu Thr Asn
3955	3960	3965
Thr Met Asp Val Phe Val Lys	Glu Pro Ser Phe	Asp Trp Lys Asn Phe
3970	3975	3980
Glu Gln Lys Met Leu Lys	Gly Ser Trp Ile Gln	Glu Ile Asn
3985	3990	3995
Val Ala Glu Lys Asn Trp Tyr Pro	Arg Gln Lys Ile Cys	Tyr Ala Lys
4005	4010	4015
Arg Lys Leu Ala Gly Ala Asn Pro	Ala Val Ile Thr Cys	Asp Glu Leu
4020	4025	4030
Leu Leu Gly His Glu Lys Ala Pro	Ala Phe Arg Asp	Tyr Val Ala Val

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Ala Arg Gly Ser Lys Asp His Asn Ile Arg Ala Gln Glu Pro Glu Ser		
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Gly Leu Ser Glu Glu Thr Gln Val Lys Cys Ile Met Asp Gln Ala Thr		
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Gly Arg Ala Ser Cys Lys Lys Cys Ser Glu Ser Ile Pro Lys Asp Ser		15
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Leu Arg Met Ala Ile Met Val Gln Ser Pro Met Phe Asp Gly Lys Val		
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Pro His Trp Tyr His Phe Ser Cys Phe Trp Lys Val Gly His Ser Ile		
50	55	60
Arg His Pro Asp Val Glu Val Asp Gly Phe Ser Glu Leu Arg Trp Asp		
65	70	75
Asp Gln Gln Lys Val Lys Lys Thr Ala Glu Ala Gly Gly Val Thr Gly		80
85	90	95
Lys Gly Gln Asp Gly Ile Gly Ser Lys Ala Glu Lys Thr Leu Gly Asp		
100	105	110
Phe Ala Ala Glu Tyr Ala Lys Ser Asn Arg Ser Thr Cys Lys Gly Cys		
115	120	125
Met Glu Lys Ile Glu Lys Gly Gln Val Arg Leu Ser Lys Lys Met Val		
130	135	140
Asp Pro Glu Lys Pro Gln Leu Gly Met Ile Asp Arg Trp Tyr His Pro		
145	150	155
Gly Cys Phe Val Lys Asn Arg Glu Glu Leu Gly Phe Arg Pro Glu Tyr		160
165	170	175
Ser Ala Ser Gln Leu Lys Gly Phe Ser Leu Leu Ala Thr Glu Asp Lys		
180	185	190
Glu Ala Leu Lys Lys Gln Leu Pro Gly Val Lys Ser Glu Gly Lys Arg		
195	200	205
Lys Gly Asp Glu Val Asp Gly Val Asp Glu Val Ala Lys Lys Lys Ser		
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Lys Lys Glu Lys Asp Lys Asp Ser Lys Leu Glu Lys Ala Leu Lys Ala		
225	230	235
Gln Asn Asp Leu Ile Trp Asn Ile Lys Asp Glu Leu Lys Lys Val Cys		240
245	250	255
Ser Thr Asn Asp Leu Lys Glu Leu Leu Ile Phe Asn Lys Gln Gln Val		
260	265	270
Pro Ser Gly Glu Ser Ala Ile Leu Asp Arg Val Ala Asp Gly Met Val		
275	280	285
Phe Gly Ala Leu Leu Pro Cys Glu Glu Cys Ser Gly Gln Leu Val Phe		
290	295	300
Lys Ser Asp Ala Tyr Tyr Cys Thr Gly Asp Val Thr Ala Trp Thr Lys		
305	310	315
Cys Met Val Lys Thr Gln Thr Pro Asn Arg Lys Glu Trp Val Thr Pro		320
325	330	335
Lys Glu Phe Arg Glu Ile Ser Tyr Leu Lys Lys Leu Lys Val Lys Lys		
340	345	350
Gln Asp Arg Ile Phe Pro Pro Glu Thr Ser Ala Ser Val Ala Ala Thr		
355	360	365
Pro Pro Pro Ser Thr Ala Ser Ala Pro Ala Ala Val Asn Ser Ser Ala		
370	375	380

Ser Ala Asp Lys Pro Leu Ser Asn Met Lys Ile Leu Thr Leu Gly Lys
 385 390 395 400
 Leu Ser Arg Asn Lys Asp Glu Val Lys Ala Met Ile Glu Lys Leu Gly
 405 410 415
 Gly Lys Leu Thr Gly Thr Ala Asn Lys Ala Ser Leu Cys Ile Ser Thr
 420 425 430
 Lys Lys Glu Val Glu Lys Met Asn Lys Lys Met Glu Glu Val Lys Glu
 435 440 445
 Ala Asn Ile Arg Val Val Ser Glu Asp Phe Leu Gln Asp Val Ser Ala
 450 455 460
 Ser Thr Lys Ser Leu Gln Glu Leu Phe Leu Ala His Ile Leu Ser Pro
 465 470 475 480
 Trp Gly Ala Glu Val Lys Ala Glu Pro Val Glu Val Val Ala Pro Arg
 485 490 495
 Gly Lys Ser Gly Ala Ala Leu Ser Lys Lys Ser Lys Gly Gln Val Lys
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 Glu Glu Gly Ile Asn Lys Ser Glu Lys Arg Met Lys Leu Thr Leu Lys
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 Val Leu Glu Lys Gly Lys Val Phe Ser Ala Thr Leu Gly Leu Val
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 Asp Ile Val Lys Gly Thr Asn Ser Tyr Tyr Lys Leu Gln Leu Leu Glu
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 Asp Asp Lys Glu Asn Arg Tyr Trp Ile Phe Arg Ser Trp Gly Arg Val
 580 585 590
 Gly Thr Val Ile Gly Ser Asn Lys Leu Glu Gln Met Pro Ser Lys Glu
 595 600 605
 Asp Ala Ile Glu His Phe Met Lys Leu Tyr Glu Glu Lys Thr Gly Asn
 610 615 620
 Ala Trp His Ser Lys Asn Phe Thr Lys Tyr Pro Lys Lys Phe Tyr Pro
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 Leu Glu Ile Asp Tyr Gly Gln Asp Glu Glu Ala Val Lys Lys Leu Thr
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 Val Asn Pro Gly Thr Lys Ser Lys Leu Pro Lys Pro Val Gln Asp Leu
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 Ile Lys Met Ile Phe Asp Val Glu Ser Met Lys Lys Ala Met Val Glu
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 Tyr Glu Ile Asp Leu Gln Lys Met Pro Leu Gly Lys Leu Ser Lys Arg
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 Gln Ile Gln Ala Ala Tyr Ser Ile Leu Ser Glu Val Gln Gln Ala Val
 705 710 715 720
 Ser Gln Gly Ser Ser Asp Ser Gln Ile Leu Asp Leu Ser Asn Arg Phe
 725 730 735
 Tyr Thr Leu Ile Pro His Asp Phe Gly Met Lys Lys Pro Pro Leu Leu
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 Ser Ser Lys Asp Pro Ile Asp Val Asn Tyr Glu Lys Leu Lys Thr Asp
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 Ile Lys Val Val Asp Arg Asp Ser Glu Glu Ala Glu Ile Ile Arg Lys
 805 810 815
 Tyr Val Lys Asn Thr His Ala Thr Thr His Asn Ala Tyr Asp Leu Glu
 820 825 830
 Val Ile Asp Ile Phe Lys Ile Glu Arg Glu Gly Glu Cys Gln Arg Tyr
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 Lys Pro Phe Lys Gln Leu His Asn Arg Arg Leu Leu Trp His Gly Ser
 850 855 860
 Arg Thr Thr Asn Phe Ala Gly Ile Leu Ser Gln Gly Leu Arg Ile Ala
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Pro Pro Glu Ala Pro Val Thr Gly Tyr Met Phe Gly Lys Gly Ile Tyr
885 890 895
Phe Ala Asp Met Val Ser Lys Ser Ala Asn Tyr Cys His Thr Ser Gln
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Gly Asp Pro Ile Gly Leu Ile Leu Leu Gly Glu Val Ala Leu Gly Asn
915 920 925
Met Tyr Glu Leu Lys His Ala Ser His Ile Ser Lys Leu Pro Lys Gly
930 935 940
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Ser Gly Val Asn Asp Thr Ser Leu Leu Tyr Asn Glu Tyr Ile Val Tyr
980 985 990
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Phe Lys Thr Ser Leu Trp
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